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## Lecture for medical students on new galactic alliance species "Humans"

OC Text

My second story on here. This one was fun to think up and i hope you enjoy the concept as much as I have.

"Hello students. I am glad you are all here and congratulations on almost completing your final year at the Greater Galactic Medical institute"

Xen took a minute to finish taking in the gathered crowd of eager students form the fifteen or so species that made up the known galactic community.

"you might not know me so to properly introduce myself I am Doctor Xen; I was part of the first contact team that for the past four years has been working with the humans on bringing them into our united group."

At this many of the students started murmuring, xen had expected this. Humans were still new to much of the galaxy and were quite the topic of debate and wonder. Due to the fact that they came from Sol 3 a class 12B death world, No doubt the stories that they told and that were told of them supported this ridiculous notion. Soon the room quieted down, and a couple of students raised their hand as expected of young and inquisitive minds.

"Please save your questions for later as my topic for today will hopefully answer some, and most likely give you ten-fold more than you had, as learning about humans usually tends to."

At that many of the students did their equivalent of a nervous laugh, and those with their hands up put them down. A couple of seconds later the room was quiet.

"To start off it is important that you understand something fundamental about humans that applies in every aspect of their lives, this is that there is no steadfast rule that can lock humans down. There are trends and things that are more common but there is always something that will bend or break that trend."

The mutters from the room confirmed that many of the students had gathered this from the stories that had filtered out to the community about the absolute chaos that humans could bring.

"That is not what I am here to talk to you about today. I have been brought here to give advice to all of you and a warning to some. You see after the usual diplomatic dance, when our peoples started sharing information with the humans, my medical

team noted something unique about their body that sets them apart from all other known sentient peoples."

Xen took a moment to look over the group gathered before him now as quiet as a statue, he knew that they were wondering what further oddity of the humans he was about to explain to them.

"There is no definitive term for this yet so please bear with me. You there"

He pointed to a particular bright looking student in the second row back

"can you explain how our nervous system works in laymen's terms?"

Looking confused the student responded after a second

"Our main brain communicates via nerves with the rest of our body and tells each part how to function to keep us alive and perform tasks that we need to complete. Why do you ask, do the humans not do this?"

Xen nodded to the student and signaled for them to sit down.

"In a way the human's still have a system that sends signals to the body to form functions but"

He stopped to think of the best way to start explaining the reason for this lecture.

"you" he pointed to another student "explain to me in detail what your body does to pick up a tablet on your desk"

The student stood up and picked up their tablet and thought for a second

"well first I had my left nevlx muscle extend as the right nevlx muscle contracted thus lowering my arm then I tighten my ocvenal joint to turn my grasper to a position to grab the tablet then tightened my vonax ligament to grip the tablet and repeated all the steps one through three in the opposite order to pick it up"

The students seemed a bit confused as this was something almost everyone could explain even if they did not know the exact names of the muscles used to perform the task.

"exactly, you see the thing is if I asked a human to do the same task and describe how they did it, they could not unless they understood how their muscle structure worked and what muscles needed to be moved prior to me asking. This is true for much of the human body. Many of the actions that they take are like there sentient part of the brain hitting a switch and the body preforms an action. whereas our brains have to manipulate each mussel individually."

Many of the students were looking super confused about this until one lifted her wing and when Xen nodded to let her speak, she asked

"so, if I asked a human to, um, lift an appendage above their head they would just think arm up and it would go up?"

Xen smiled these students were smart

"That is a massive oversimplification but yes, the only big correction is that apparently they do not even have to think "arm move up", a part of their brain handles that for them."

Xen stopped for a second seeing the confusion growing on all the students faces.

"I know that this is hard to understand and trust me I felt the same way at first, the reason that I am struggling to explain it is that the system is so autonomous that the humans themselves had a hard time explaining it to me. That shows how much of a closed system their motor control is.

The first student raised their appendage

"yes" Xen nodded to them

"so what you are saying is that the humans operate more like an auto forge where you request an item and it spits one out, whereas we are more like building that object by hand?"

Xen stopped for a brief second; these students were absolutely top of their classes!

"Yes, very well put, now that the basic explanation is out of the way, let me explain how this will affect you working on and with humans. You see in addition to the black box nervous system some of their body functions are completely out of their control. The biggest example of this is their heart. It is what they consider a smooth muscle. That is a term for an organ or structure that can and does work with little to no input from the main nervous system."

More mutters from the class, and he could hear a couple of students quietly discussing how this could be a benefit?

"So, the human heart, it does react to outside stimuli for example if the human starts running for example the heart will start beating faster to increase the blood flow to the body. But unlike us the humans cannot do this intentionally, they can do something to trigger the response but not control their heart directly. Now many of you might wonder the reasons for this, the answer to that question gets more into the overall advantage of their nervous system. Can anyone guess what it would be"

Looking around the room Xen picked on one of many appendages that shot into the air. The student eagerly responded.

"it must provide them with the ability to multi-task much more efficiently as the parts of their brains that we would use for controlling our bodies can instead be used to think of other things."

Xen a good theory but the student was thinking too far forward in their history

"good guess but humans are actually comparatively bad multitaskers verses the rest of the members of the coalition. Anyone else have an idea on the reason for this? And before I pick someone else consider that this system is something that most every species on sol three has"

After a couple of seconds of quiet murmuring a shy looking student who was being encouraged by the others next to them raised an appendage.

"go on" Xen said looking at them

"Well in light of what you said it must provide some sort of survival benefit, but I cannot seem to think what that would be as is it not more advantageous to have complete control of your body and thus be able to more precisely react to and avoid dangerous situations?"

Now they were catching on

"you are correct this does have to do with survival on their world. You see in most cases it would be more advantageous to have more accurate control of one's body but Tera as they call it is unique in that there are so many situations and problems that can arise that most of the times if a being is to forage, hunt, explore, or reproduce they will have to expose themselves to a multitude of risks and thus learning the best way to counter the uncountable dangers that could happen at any given second not viable"

Another student spoke up

"so, it is like working at a general clinic versus a specialized care facility. The tool kit for the facility is too specialized to handle the wide range of cases that would come in at a clinic"

"Odd analogy but, yes that is exactly it. There are other aspects of this system, and like most things with humans they are both a blessing and a curse. Can someone tell me how our systems deal with pain and how it affects us?"

A student in the back stood up to be able to speak to the full room

"well, we can feel pain like most other species and if the pain gets too much we can, in simple terms, deactivate a nerve cluster thus not feeling the pain but this comes with the disadvantage of then loosing function of whatever that nerve cluster controlled.

As well if we are in too much pain it can block or confuse signals our brain is trying to send to a part of our anatomy making it hard or impossible to use or accurately control."

Xen was so happy; it seemed every year the graduates got brighter and brighter.

"exactly a wonderful summarisation! As you most likely expect by now the human system works different. Thanks in part to the autonomy of their nerves they can still use and control parts of their body that is in pain way past what we could consider inoperable. They call this ability pain tolerances, a good example of this is that they are still able to move and utilize a limb that has one or several fractures in their endoskeleton."

At this many of the students flashed looks of shock and winced as they could only begin to think of the amount of pain that would cause, and that fact that they could still use that appendage. Just then a hand slowly raised almost like they were afraid to ask this question.

"if they could use a limb that has fractures would that not have a large risk of dealing further damage to the limb and making their situation worse?"

Xen nodded "yes and most of the time that is what happens, now before you ask the reason why let me explain another thing that ties well into this question. You see due to the hidden operation of their nervous system humans have comparatively little information about what is going on in their own bodies. For example, if they get hit with something and it causes a small fracture in a part of their endoskeleton, they will feel pain in the area of the break but will not know for sure that there is a fracture or if the bone is just bruised. The same goes for many other injuries and ailments. Another big one is headaches if they are dehydrated, their optic nerves are over stressed or a plethora of other things they will feel pain in their brain but not be able to reliably know the source. Most frighteningly of all is cancer as most of the time they can go for years with a dangerous growth and not realize it is there, whereas we would notice the problem in a matter of weeks."

Xen took a second to let this sink in before asking his next question.

"so why would humans, who to remind you have a home planet with some of the most competitive evolution, end up with a nervous system that could not detect problems within their body and can only partially tell what known problems are?"

A couple of students seemed to think they had an answer but quickly brought their hand down as Xen assumed, they found a fault in their logic. After a couple of minutes of hushed discussion but no one coming forward Xen continued,

"The simple answer is life expectancy, because on Tera the environment was so hostile to early humans that the ability to keep functioning even if they were in pain as well as being able to react faster by simplifying what the active part of their brain needed to do allowed them to last longer than our more detailed system."

At this point many students were looking concerned and one lifted an appendage and when pointed at spoke

"so, what you are saying is the reason for the human's unique nervous system is that the earliest version of themselves were more likely to be killed by some physical and or environmental factor than the cancer?"

Xen was pleased at how well this group was handing the alien concept.

"exactly, given in their modern ages this system may not be as university helpful as ours, except in some specific circumstances a good example of this is the humans reflexes. Some of you may have herd of humans moving out of the way of things that many of us would not have had time to recognize as a potential threat and then later saying that they did not ever see the thing that they avoided. This is a prime example of the human's body just acting and triggering the movements without any thought. Something that is only possible because they do not have the ability to individually control their muscles and instead their motor control is mostly automated."

Just then a notification popped up on Xen's tablet, an alarm to warn them that the time allotted for this talk was coming to an end.

"ok, two more things that are important for you to know, Starting out with this."

Tapping an icon on the tablet the screen behind him flickered to life.

"what I am about to show you is a little bit graphic but is an excellent example of both the human body's compartmentalized nervous structure as well as another benefit of their bodies"

Tapping play showed the video of a human heart outside of one of their bodies being supplied fresh blood from a tube and pumping away happily as if it was not sitting in a sterile white box"

"This is a human heart that is being brought to a hospital for transplant to one of their elders, who was having heart problems, and yes this is real and something that is quite common. The shocking part is the fact that all that the heart needs to work is fresh blood, given it cannot last forever in this state. As well it is true that humans can use and I don't like using this term, but it fits the best, "parts" from others in order to keep functioning."

Xen let the video loop over once more before turning it off and nodding to a student who wanted to ask a question.

"have you witnessed this procedure yourself?"

Xen chuckled then responded "no I have not, but I have met a human who had the procedure done"

The student nodded seeming satisfied with the answer. Xen waited a second for the room to quiet again before starting on the most important part of the lecture

"This last part only applies to those of you who have been gifted the ability to interface with other beings' nerves systems, thus be able to feel what they do. You need to, under no circumstances attempt this with a human. We know that this ability makes lets doctors be able to truly understand a patient need. When it comes to humans forget your ability. Due to the differences in nervous systems doing so would be equivalent to plugging a delicate medical instrument into a ships warp core directly, the results may be similar. Thus, it is important to learn how to diagnose humans without using this technique. Luckily for us over their history they have developed many methods of determining the sources of their ailments. As well most anywhere you would be asked to work on a human there will most likely be a human doctor to assist you. That is all the time I have for today so you may leave if you like or stay if you have questions"

Xen was happy to see that after a couple of seconds of silence not one of the students budged from where they were sitting. This Q&A was most likely going to last longer than the lecture. And Xen could not be happier.